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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/804,932	03/13/2001	Ravindra K. Shetty	H0001595 (256.092US1)	1920

128 7590 07/15/2003  
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EXAMINER

LEROUX, ETIENNE PIERRE

ART UNIT PAPER NUMBER

2171

DATE MAILED: 07/15/2003

5

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.  
09/804,932

Applicant(s)

Shetty

Examiner  
Etienne P LeRoux

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Jun 26, 2003
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 7 and 12 is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-11 is/are rejected.
- 7) ☒ Claim(s) 13 and 14 is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on Mar 13, 2001 is/are a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some\* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_
- ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other:

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### DETAILED ACTION

Claims 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by USPAT 3,645,015 issued to Pfeiffer (hereafter Pat '015), as best examiner is able to ascertain.

Regarding claim 1, Pat '015 discloses:

receiving a text including multiple words

transforming each of the received words into a unique numeral representation

such that the transformed unique numerical representation does not result in multiple similar

numerical representations [col 1, line 62 through col 2, line 25].

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Regarding claim 1, examiner maintains “to avoid ambiguous prediction of meaning of the translated words in the received text” is drawn to intended use and is the objective of the claimed invention. Supra limitation will not be given patentable weight.

Claims 1 and 2 are rejected under 35 U.S.C. 102(b) as being anticipated by USPAT 5,892,470 to Kusnick (hereafter Pat ‘470), as best examiner is able to ascertain.

Regarding claim 1, Pat ‘470 discloses:  
receiving a text including multiple words [col 2, line 55]  
transforming [col 4, lines 1-27] each of the received words into a unique numeral representation  
such that the transformed unique numerical representation does not result in multiple similar  
numerical representations

Regarding claim 1, examiner maintains “to avoid ambiguous prediction of meaning of the translated words in the received text” is drawn to intended use and is the objective of the claimed invention. Supra limitation will not be given patentable weight.

Regarding claim 2, Pat ‘470 discloses receiving the text from a database [Fig 1, 101, col 2, lines 30-34 and col 3, lines 1-5]

### ***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-6 and 8-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over USPAT 5,892,470 issued to Kusnick (hereafter Pat '470) as applied to claim 1 above, and further in view of USPAT 6,502,091 issued to Chundi et al (hereafter Pat '091), as best examiner is able to ascertain.

Regarding claim 3, Pat '470 discloses the essential elements of the claimed invention except for a keyword and morphologizing a key word. Pat '091 discloses a keyword [col 2, line 54] and morphologizing a key word [col 1, lines 39-49]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Pat '470 to include a keyword and morphologizing a key word as taught by Pat '091 for the purpose of relating user queries and documents and furthermore for the purpose of computing word relationships by means of reducing words to common roots [col 1, lines 44-48 and col 2, lines 50-54].

Regarding claim 4, Pat '470 discloses the essential elements of the claimed invention except for filtering to remove rarely used words. Pat '091 discloses removing rarely used words [col 2, lines 50-61]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Pat '470 to include removing rarely used words as taught by Pat '091 for the purpose of locating documents relevant to a user's information needs from a collection of documents [col 1, lines 15-37].

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Regarding claim 5, Pat '470 discloses the essential elements of the claimed invention except for text mining. Pat '091 discloses text mining [abstract]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Pat '091 to include text mining as taught by Pat '091 for the purpose of receiving user queries and generating information retrieval sessions [abstract].

Regarding claim 6, Pat '470 discloses natural language [col 2, line 55].

Regarding claim 8, Pat '470 discloses an analyzer to transform each of the morphologized words to a unique numerical representation such that the transformed unique numerical representation does not result in multiple similar representations, to avoid ambiguous prediction of meaning of the translated words in the received text [col 4, lines 1-27]

Regarding claim 8, Pat '470 discloses the essential elements of the claimed invention except for a web server. Pat '091 discloses a web server [abstract]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Pat '470 to include a web server as taught by Pat '091 for the purpose of being able to locate documents via the Internet.

Regarding claim 8, Pat '470 discloses the essential elements of the claimed invention except for a keyword and morphologizing a key word. Pat '091 discloses a keyword [col 2, line 54] and morphologizing a key word [col 1, lines 39-49]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Pat '470 to include a keyword and morphologizing a key word as taught by Pat '091 for the purpose of relating user

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queries and documents and furthermore for the purpose of computing word relationships by means of reducing words to common roots [col 1, lines 44-48 and col 2, lines 50-54].

Regarding claim 9, Pat '470 discloses the essential elements of the claimed invention except for filtering to remove rarely used words. Pat '091 discloses removing rarely used words [col 2, lines 50-61]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Pat '470 to include removing rarely used words as taught by Pat '091 for the purpose of locating documents relevant to a user's information needs from a collection of documents [col 1, lines 15-37].

Regarding claim 10, Pat '470 discloses the essential elements of the claimed invention except for text mining. Pat '091 discloses text mining [abstract]. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Pat '091 to include text mining a taught by Pat '091 for the purpose of receiving user queries and generating information retrieval sessions [abstract].

Regarding claim 11, Pat '470 discloses natural language [col 2, line 55].

### *Allowable Subject Matter*

Claims 7 and 12 are allowable for including a mathematical formula which defines the helix transformation function.

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***Response to Arguments***

5. Applicant's arguments filed 6/26/2003, have been fully considered but they are not persuasive.

Applicant states on page 6, "Amended claim 1 is respectfully asserted to distinguish over Pfeiffer. Pfeiffer in col 1, lines 4-15, lines 44-45, and line 62 in col 6, claim 1, line 1 describes a Morse code teaching device that translates merely the Morse signals into letter, and finally into words, and vice versa, and does not teach a method of 'transforming each of the received words into unique numerical representations such that the transformed unique numerical representations does not result in multiple similar numerical representations'." Examiner is not persuaded. Examiner maintains Morse code reads on the present invention. Morse code provides an unique numerical representation comprising an unique number of dots and dashes for a word.

Applicant states on page 7, "Amended claim 1 respectfully asserted to distinguish over Kusnick. Kusnick in col 2, lines 7-9, lines 23-24, and lines 47-58 in col 6, claim 1, lines 33-36, and in Figs 3 and 4 describes a technique for encoding a number as a sequence of words. The words themselves are selected from a table of words. Kusnick does not teach a *method of transforming each of the received words into unique numerical representations such that the transformed unique numerical representations does not result in multiple similar numerical*



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*representations.*” Examiner is not persuaded. Kusnick ‘470 discloses in col 2, lines 46-67 the following:

The present invention provides a computer-based method and system for encoding a number as a sequence of words. The system has a table of words from which the words in the sequence are selected. Each word in the table has an index. To encode the number, the system first calculates an integer quotient of the number divided by a count of the words in the table and calculates a remainder of the number divided by the count of the words in the table. The system then repeats the following until the integer quotient is zero. The system selects the word in the table that is indexed by the remainder. The system then adds that word to the sequence. The system then calculates a new remainder of the integer quotient divided by the count of the words in the table and calculates a new integer quotient of the integer quotient divided by the count of the words in the table. The sequence of the words when complete represents the encoding of the number. The present invention also provides a computer-based method and system for decoding an encoding of a number to determine the number represented by the encoding. The system initializes the number to zero. The system then repeats the following for each word in the encoding. The system determines the index of the word in the table of words. The system multiplies the number by the count of words in the table. The system then adds the determined index to the number. When the process is complete, the number contains the value represented by the encoding.

Examiner maintains above excerpt from Kusnick ‘470 reads on the claimed invention and in particular provides a unique numerical representation for a series of words.

Applicant states on page 7, “Independent claims 1 and 8 are respectfully asserted to distinguish over Kusnick for the reasons presented above. Further, claims 3-6 and 8-11 are respectfully asserted to distinguish over the Kusnick and Chundi references. None of these references describe transforming words to unique numerical representations such that the transformed unique numerical representations does not result in multiple similar numerical

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representations, as recited in claims 1 and 8. Chundi in col 2, lines 50-61 describes a method for relating user queries and documents by identifying contexts associated with a user query.

Furthermore, Chundi does not teach morphologizing key words based on similarities of fundamental characteristics as recited in claims 3 and 8. In addition, Chundi does not teach extracting one or more key-words based on a specific criteria selected from the group comprising filtering to remove all words comprised of three or fewer letters, and filtering to remove rarely used words as recited in claims 4 and 9. Examiner is not persuaded. Kusnick '470 discloses in col 2, lines 46-67 the following:

The present invention provides a computer-based method and system for encoding a number as a sequence of words. The system has a table of words from which the words in the sequence are selected. Each word in the table has an index. To encode the number, the system first calculates an integer quotient of the number divided by a count of the words in the table and calculates a remainder of the number divided by the count of the words in the table. The system then repeats the following until the integer quotient is zero. The system selects the word in the table that is indexed by the remainder. The system then adds that word to the sequence. The system then calculates a new remainder of the integer quotient divided by the count of the words in the table and calculates a new integer quotient of the integer quotient divided by the count of the words in the table. The sequence of the words when complete represents the encoding of the number. The present invention also provides a computer-based method and system for decoding an encoding of a number to determine the number represented by the encoding. The system initializes the number to zero. The system then repeats the following for each word in the encoding. The system determines the index of the word in the table of words. The system multiplies the number by the count of words in the table. The system then adds the determined index to the number. When the process is complete, the number contains the value represented by the encoding.

Examiner maintains above excerpt from Kusnick '470 reads on the claimed invention and in particular provides a unique numerical representation for a series of words.

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Furthermore, Chundi '091 discloses in column 1, lines 39-63 the following:

The word mismatch problem is often solved by computing relationships between words in a given domain. In response to a query, the text retrieval system returns not only those documents that contain the words in the query, but also those documents that contain their related word as given by the word relationships. Word relationships are usually computed by some form of corpus analysis and by using domain knowledge. For example, stemming, a popular method to compute word relationships, reduces words to common roots. As a result, documents containing morphological variants of the query words are also included in the response. Another popular approach of computing word relationships is to use manual or automatically generated thesauri. Manual thesauri are built using human experience and expertise, and hence, are costly to build. Previously, corpus analysis has been used to generate a thesaurus automatically from the content of documents. Automatic construction of thesauri is based on a well-known hypothesis call the "association hypothesis" which states that related terms in the corpus tend to co-occur in documents. "Association hypothesis" can capture word relationships that are specific to the corpus. However, generating a thesaurus automatically from the entire corpus is very expensive if the corpus contains millions of documents. It is also hard to maintain if documents are frequently added to the corpus.

Examiner maintains above excerpt from Chundi '091 reads on the claimed invention and in particular on morphologizing key words based on similarities of fundamental characteristics as recited in claims 3 and 8

Furthermore, Chundi '091 discloses in column 2, lines 50-61 the following:

According to another aspect, a method is provided for relating user queries and documents using usage logs from retrieval sessions from a text retrieval system. The method includes: identifying contexts associated with a user query comprising at least one specific query keyword; identifying user queries having similar query contexts; partitioning user queries into groups based upon similarity of the query contexts; merging the groups to compute multiple contexts associated with specific query keywords; and applying a clustering algorithm to identify similar query contexts based upon the query keywords to generate context groups that associate keywords with documents accessed by users.

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Examiner maintains above excerpt from Chundi '091 reads on the claimed invention and in particular on extracting one or more key-words based on a specific criteria.

Furthermore, Chundi '091 discloses in column 2, lines 40-49 the following:

The database stores data in the form of usage logs generated from the information retrieval sessions generated by a user at the client. The data mining mechanism includes a clustering algorithm operative to identify context groups and usage categories. The data mining mechanism is operative to identify query contexts associated with individual queries from the usage logs, partition the queries into context groups having similar contexts, and compute multiple context groups associated with specific query keywords from the usage logs.

Examiner maintains above excerpt from Chundi '091 reads on the claimed invention and in particular on filtering to remove rarely used words

### ***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however,

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will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Etienne (Steve) LeRoux whose telephone number is (703) 305-0620.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Safet Metjahic, can be reached at (703) 308-1436.

Any inquiry of a general nature relating to the status of this application or processing procedure should be directed to the receptionist whose telephone number is (703) 305-3900.

Etienne LeRoux

July 9, 2003



FRANTZ COBY  
PRIMARY EXAMINER